limitations in those claims that the Examiner detailed in the rejection. This is further supported by the fact that the Examiner cites claims 39-44 as rejected under Section 103 in paragraph 6. Therefore, Applicants below will treat the rejection to claims 29-30 as being under Section 102 and claims 34-35 and 39-44 as being under Section 103. Applicants request confirmation from the Examiner of this interpretation of the Office Action.

REJECTION OF CLAIMS 29-30 UNDER SECTION 102(E)

The Examiner rejects claims 29 – 30 under Section 102(e) in view of Suzuki et al. Applicants maintain that Suzuki et al. is not a valid Section 102(e) reference and reserve the right to challenge its status as prior art. However, Applicants also maintain that even if Suzuki et al. were prior art, that claims 29 - 30 recite allowable subject matter. Accordingly, the following remarks provide additional reasons why claims 29 – 30 are allowable over Suzuki et al.

Regarding claim 29, the Examiner cites FIGS. 29 and 32-37 and column 28, lines 13-50, and column 31, lines 9-27 and line 29 through column 33, line 49 urging that the video_object_layer_id of Suzuki et al. corresponds to the limitations in claim 29 of assigning priorities to video object layers, transmitting an identifier of the VOL's priority and transmitting VOPs of the VOL. Applicants respectfully submit that for the following reasons, the video_object_layer_id and associated disclosure of Suzuki et al. differs from the priority limitations recited in claim 29.

The Examiner argues that the video_object_layer_id disclosed by Suzuki et al. corresponds to the limitations of claim 29 related to assigning priorities to the VOLS and transmitting an identifier of the VOL's priority. Further, since the video_object_layer_id is transmitted in the data stream in Suzuki et al., the Examiner concludes that this relates to transmitting the priority data to a decoder. However, a careful analysis of the disclosure related to the operation of the video_object_layer_id of Suzuki et al. confirms that their video_object_layer_id does not (1) assign priorities to VOLs or (2) contain an identifier of the VOL's priority. Since the video_object_layer_id does not perform items (1) or (2), then the last step of claim 29, transmitting an identifier of the VOL's priority, is also not disclosed by Suzuki et al.

Specifically, the video_object_layer_id is disclosed at column 31, lines 9 – 27 and FIG. 35. The video_object_layer_id provides a parameter that identifies whether the VOL is in the lower

layer (value of video_object_layer_id would be "0") or the upper layer (value of the video_object_layer_id would be "1"). The Examiner argues in the Office Action that Suzuki et al. teaches that the lower layer is decoded independently but that the upper layer cannot be independently decoded. "Therefore, video_object_layer_id, for lower layer or upper layer, that provide[sic] indication of decoding priority are assigned priorities." Paragraph 2, Advisory Action. As shall be explained below, when the Examiner gives proper interpretive weight to the word "priority" in claim 29, it should become clear that claim 29 is not anticipated by Suzuki et al.'s disclosure.

First, the Examiner is correct (in Paragraph 2 of the Advisory Action) that the claims are not further limited to "permitting important data to be scheduled ahead" as was discussed in early arguments by Applicant. This is not meant to be a limitation on the claimed inventions but an example of one way that a priority can exist between VOLs. However, comparing the claims having the "priority" limitation to the description of the lower and upper layers of Suzuki et al. should lead to a conclusion that claim 29 is patentable.

Next, Applicants further explain the spatial scalability feature disclosed by Suzuki et al. that relates to the lower-layer and upper-layer. It is instructive to provide column 4, lines 31-60 and column 5, lines 30-45, wherein Suzuki et al. explain the differences between the lower-layer bitstream and the upper-layer bitstream. Applicants will summarize this material but urges the Examiner to notice that the lower and upper layer are different and that there is no disclosure of *priority* between the two layers. They merely process different picture sizes differently:

> In spatial scalability, if only a lower-layer bitstream is decoded, for example, only a picture with a small picture size is obtained, whereas, if both lower-layer and upper-layer bitstreams are decoded, a picture with a large picture size is obtained. FIG. 3 illustrates an encoding unit for providing spatial scalability. In spatial scalability, the lower and upper layers are associated with picture signals of a small picture size and those with a large picture size, respectively. The upper-layer encoding unit 201 may receive an upper-layer picture for encoding, whereas, the lower-layer encoding unit 202 may receive a picture resulting from a thinning out process for reducing the number of pixels (hence a picture lowered in resolution for diminishing its size) as a lower-layer picture. The lower-layer encoding unit 202 predictively encodes a lower-layer picture in a manner similar to that of FIG. 1 so as to

> form and output a lower-layer bitstream. The lower-layer encoding unit 202 also generates a picture corresponding to the locally decoded lower-layer picture enlarged to the same size as the upper-layer picture size (occasionally referred to herein as an enlarged picture). This enlarged picture is supplied to the upper-layer encoding unit 201. The upper-layer encoding unit 201 predictively encodes an upper-layer picture in a manner similar to that of FIG. 1 so as to form and output an upper-layer bitstream. The upper layer encoding unit 201 also uses the enlarged picture received from the lower-layer encoding unit 202 as a reference picture for executing predictive coding. The upper layer bitstream and the lower layer bitstream are multiplexed to form encoded data which is outputted. Col. 3, lines 31-60.
>
> FIG. 6 illustrates an example of a decoder for implementing spatial scalability. Output encoded data from the encoder of FIG. 3 is separated into an upper layer bitstream and a lower layer bitstream which are supplied to an upper layer decoding unit 231 and to a lower layer decoding unit 232, respectively. The lower layer decoding unit 232 decodes the lower layer bitstream as in FIG. 2 and outputs the resulting decoded picture of the lower layer. In addition, the lower layer decoding unit 232 enlarges the lower layer decoded picture to the same size as the upper layer picture to generate an enlarged picture and supplies the same to the upper layer decoding unit 231. The upper layer decoding unit 231 similarly decodes the upper layer bitstream, as in FIG. 2. However, the upper layer decoding unit 231 decodes the bitstream using the enlarged picture from the lower layer decoding unit 232 as a reference picture. Col. 4, lines 31-46.

As explained above, the basic principle behind the lower-layer and upper-layer coding and decoding is to process different sizes of pictures. A small picture can be coded and decoded using only the lower-layer bitstream. A larger picture is coded and decoded using a combination of the lower-layer and upper-layer bitstreams. The term "lower" in lower-layer refers to a picture resulting from a thinning out process of reducing the number of pixels to have a "lowered resolution". Col. 4, lines 43-44. Although the Examiner attaches a "priority" to the video_object_layer_id which assigns a VOL to either the upper or lower layer, there is simply no teaching that either the upper or

lower layer has any kind of priority over the other – they are merely different types of pictures. The following example illustrates the point.

Assume FIG. 1 below which is a picture of a plane with a sky in the background:

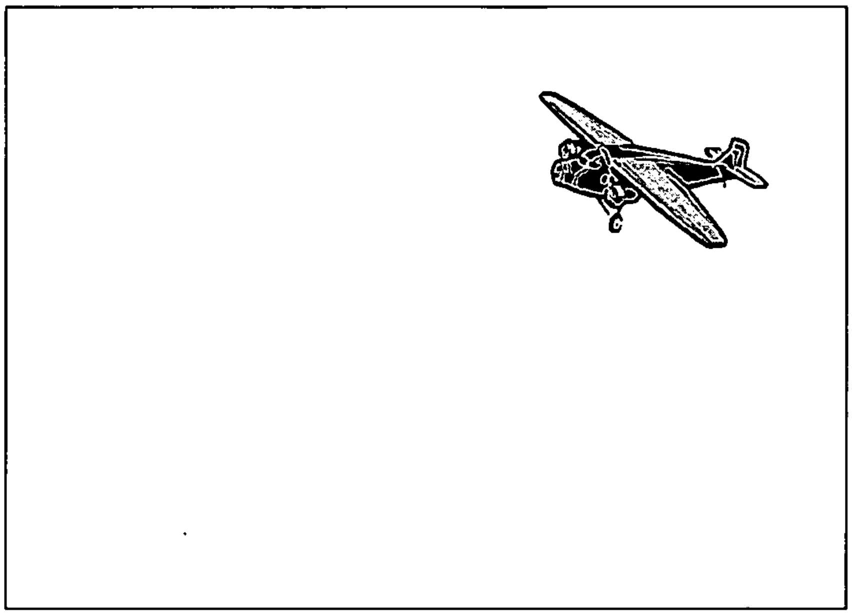

FIG. 1

According to Suzuki et al., the picture including the small picture of the plane would have a video_object_layer_id of "0" which would assign it to the lower-layer bitstream for small picture sizes. However, consider the following FIG. 2:

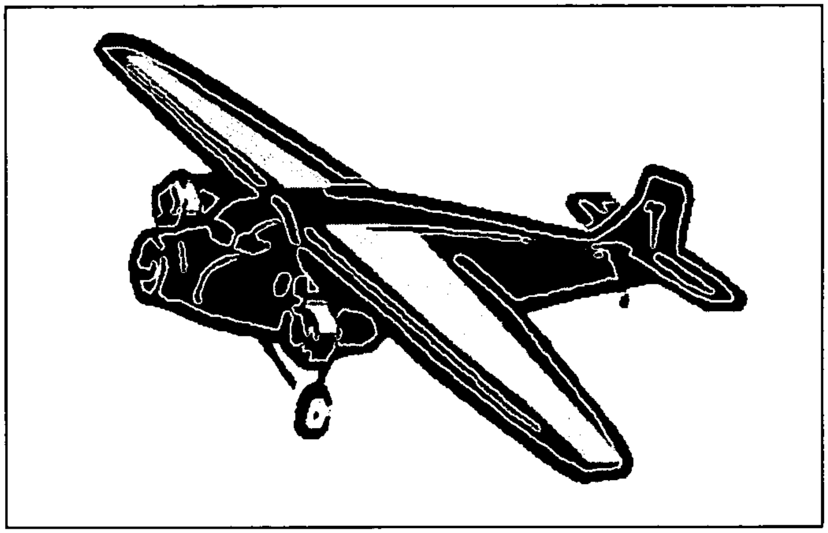

FIG. 2

This picture contains a large-sized picture of a plane and according to Suzuki et al., both the lower layered and upper-layer bitstreams would be decoded wherein a small version (with a reduced or "lowered" pixel version) of the large picture would be processed in the lower-layer bitstream, and then the lower-layered picture would be enlarged and supplied to the upper-layer decoding unit as a reference picture for executing predictive coding. This is why the "information" supplied from the lower-level bitstream to the upper-level bitstream relates to image size and other data for predictive coding purposes: size data FSZ_B, offset data FPOS_B, motion vector MV, prediction mode and/or the flag COD. Col. 28, lines 22-24.

Since Suzuki et al. clearly explain that the lower-layer bitstream and the upper–layer bitstream are used for small and large pictures respectively, the question remains whether Suzuki et al. disclose which kind of picture has "priority." A basic definition of the term "priority" requires establishing a precedence, order of importance, or some kind of ordering. See, the American Heritage® Dictionary of the English Language, Fourth Edition, Copyright ©2000 by Houghton Mifflin Company. Applicants respectfully submit that it is impossible and erroneous to assign a

priority to either kind of picture and thus impossible to assign a priority to either the upper or lower layer coding. Even the broadest interpretation of the term "priority" requires some kind of ordering based on importance or some other criterion. However, while claim 29 includes this limitation, Suzuki et al. clearly do not rank the lower or upper layer as more important than the other: they merely process large and small pictures differently. The kinds of picture are simply different and the process disclosed by Suzuki et al. of assigning the picture images to either the upper or lower layer (as identified by the video_object_layer_id) based on the size of the picture does not involve "assigning a priority to each VOL" and "transmitting an identifier of the VOL's priority" as recited in claim 29.

For the foregoing reasons, Applicants respectfully submit that Suzuki et al. discloses a process of coding and decoding large and small pictures but that this process fails to disclose the priority assignment of VOLs recited in claim 29. Therefore, this claim is patentable over Suzuki et al. and in condition for allowance.

Claim 30 depends from claim 29 and adds the limitation of a video_object_layer_priority field, which is clearly not taught by Suzuki et al. The Examiner concludes that since the number of scalable layers can be greater than 3 in Suzuki et al., that they therefore disclose this element. However, as explained above, Suzuki et al. fail to teach anything regarding a priority between the layers – only a difference in processing large or small pictures. Assigning different sized pictures to different layers does not establish an order based on importance as is required in the basic meaning of the term "priority" in claim 30. Accordingly, claim 30 is patentable and in condition for allowance.

REJECTION OF CLAIMS 34-35 and 39-44 UNDER SECTION 103

The Examiner rejects claims 34 – 35 and 39 – 44 under Section 103 as being unpatentable over Suzuki et al. in view of Chang et al. Applicants respectfully traverse this rejection and submit that these claims are patentable over the prior art of record.

Claim 34 recites the steps of: assigning a priority to each VOL; determining whether transmission conditions permit transmission of all VOLs of the video object; if not, discarding a lowest priority VOL; and transmitting data representing the VOL's priority and transmitting VOPs of the VOL. As discussed above, the primary reference Suzuki et al. fails to disclose the step of assigning a priority to each VOL. Accordingly, the combination of Suzuki et al. and Chang et al. do not reach each limitation of claim 34. Therefore claim 34 and dependent claim 35 are patentable and in condition for allowance.

Similarly, claim 39 recites the step of assigning priorities to video object layers associated with the video data stream, adding priority data for each video object layer to the video data streams, and transmitting the VOLs and priority data to a decoder. As discussed above, the limitations of assigning priorities to VOLs is not disclosed or suggested in Suzuki et al. Accordingly, the combination of Suzuki et al. and Chang et al. fail to disclose each limitation of claim 39. Therefore, claim 39 and dependent claims 40-44 each are patentable over the prior art of record and in condition for allowance.

CONCLUSION

Having addressed the rejection of claims 29-30, 34-35 and 39-44, Applicants respectfully submit that the subject application is in condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,

Date: 3/23/03

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LISTING OF CLAIMS

This listing of the claims will replace all prior versions, and listings, of claim in the Application:

Listing of Claims:

Claims 1 – 28 (Canceled)

Claim 29 (Original): A video coding method, comprising:

identifying a video object from video data,

coding time instances of the video object as a plurality of coded video object planes (VOPs),

assigning each of the VOPs to one of a plurality of video object layers (VOLs) for the video object based on the information content thereof,

assigning a priority to each VOL,

transmitting each VOL by:

transmitting an identifier of the VOL's priority, and

transmitting VOPs of the VOL.

Claim 30 (Original): The video coding method of claim 29, wherein the identifier comprises:

an is_video_object_layer_identifier flag, having a length of one bit that, when set to "1," indicates that priority is specified for the VOL,

a video_object_layer_priority field, having a length of three bits, taking values between 1 and 7, where 1 represents a highest priority and 7 represents a lowest priority.

Claims 31-33 (Cancelled)

Claim 34 (Original): A video coding method, comprising:

identifying a video object from video data,

coding time instances of the video object as a plurality of coded video object planes (VOPs),

assigning each of the VOPs to one of a plurality of video object layers (VOLs) based on information content thereof,

assigning a priority to each VOL,

determining whether transmission conditions permit transmission of all VOLs of the video object,

if not, discarding a lowest priority VOL, and

transmitting remaining VOLs by:

transmitting data representing the VOL's priority, and

transmitting VOPs of the VOL.

Claim 35 (Original): The video coding method of claim 34, wherein the identifier comprises:

an is_video_object_layer_identifier flag, having a length of one bit that, when set to "1," indicates that priority is specified for the VOL,

a video_object_layer_priority field, having a length of three bits, taking values between 1 and 7, where 1 represents a highest priority and 7 represents a lowest priority.

Claim 36 (Original): The video coding method of claim 34, wherein causal VOPs are assigned to a first VOL and non-causal VOPs are assigned to a second VOL.

Claim 37 (Original): The video coding method of claim 35, wherein intra-coded VOPs and predictive-coded VOPs are assigned to a first VOL and bidirectionally predictive-coded VOPs are assigned to a second VOL.

Claim 38 (Original): The video coding method of claim 35, wherein the data of a single VOL is transmitted as a continuous burst of data.

Claim 39 (Original): A method of prioritizing encoded video data streams, the method comprising:

assigning priorities to video object layers associated with the video data streams;

adding priority data for each video object layer to the video data streams; and

transmitting the video object layers and priority data to a decoder according to the assigned priority of each video object layer.

Claim 40 (previously amended): The method of prioritizing an encoded [a] video data stream of claim 39, wherein the priority data identifies which video object layer may be discarded in the event of limited memory or processor resources.

Claim 41 (Original): The method prioritizing encoded video data streams of claim 39, wherein the priority data identifies which video object layer may be discarded in the event of channel errors.

Claim 42 (Original): The method prioritizing encoded video data streams of claim 39, wherein the indication of the priority of the video object layer is optional.

Claim 43 (Original): The method of prioritizing encoded video data streams of claim 39, wherein information related to video object layers having a high priority is transmitted before information related to video object layers having a low priority.

Claim 44 (Previously amended): A method of decoding encoded bitstreams of claim 39, wherein the priority data identifies which [vide] <u>video</u> object layer to discard in the event of limited memory or processor resources.